Thu Nguyen

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Education

Stony Brook University Stony Brook, NY

Bachelor of Engineering in Computer Engineering *May 2027*

- **Awards:** You Are Welcome Here Scholar (50% Tuition), Global Excellence Scholarship (24,000$ over 4 years)

Technical Skills

Programming Languages: Python, Java, JavaScript, TypeScript, SQL, C/C++, Swift
Frontend Technologies: React, Next.js, HTML, CSS, TailwindCSS
Backend Technologies: Node.js, Express.js, MongoDB, PostgreSQL, Axios
AI/ML Frameworks: OpenCV, NumPy, pandas, Keras, Matplotlib, PyTorch, scikit-learn
Tools: VS Code, Anaconda, Kaggle, Git/GitHub, Figma, G-Suite, Postman

Experience

Stony Brook University Stony Brook, NY

VIP Student Researcher *February 2025 – Present*

- Collaborated in a team to develop a website that streamline data from patients' mobile phones for clinical workers to monitor and ensure effective recovery.
- Developed **RESTful API endpoints** using **Node.js** and **Express.js** to retrieve, create, update, and delete (**CRUD**) patient data efficiently.
- Designed the website front-end using **Figma** and developed **React** components with **Next.js** to ensure friendly user interaction and smooth user experiences.

Undergraduate Research Assistant *January 2025 – Present*

- Supported faculty members in a research funded by the Office of Naval Research that aims to enhance engineering students study experiences with collaborative problem-solving (CPS) models.
- Reviewed academic papers on social learning networks and team formation strategies, summarizing key takeaways.

Projects

SkinGuard - HackNYU Winner | *React, MongoDB, Node.js, JWT, Python, FlaskAPI* **Github**

- Spearheaded a team of 4 to develop a website that diagnoses and provides further information into various skin conditions using a specialized machine learning model and the OpenAI API.
- Prototyped and translated high-fidelity **Figma** mock-ups into pixel-perfect about, authentication, image uploading, and chatbot pages using **React**.
- Integrated the authentication, user database, and OpenAI API for the chatbot feature using **Node.js**, **Express.js**, **MongoDB**, and **JSON Web Token**.

SeeSay - HopperHacks Winner | *React, WebGazer.js, Web Speech API, Custom Search JSON API* **Github**

- Collaborated with a team of 4 to design and develop an accessibility-focused website, enabling mobility-impaired users to navigate the internet hands-free using **eye-tracking** and **voice commands**.
- Integrated and fine-tuned **WebGazer.js** for eye detection and gaze tracking, improving accuracy and user experience.
- Developed and implemented a search functionality using the **Custom Search JSON API**, allowing users to browse the internet seamlessly through hands-free interaction.

Resistors Classifier - SBU AI Competition Winner | *Python, OpenCV, PyTorch, Pandas*

- Optimized a **Convolutional Neural Network (CNN)** model that classified resistor values based on their color code with 72% accuracy, outperforming baseline models by 40%.
- Implemented data preprocessing using **OpenCV** and augmented data via **PyTorch**, increasing training efficiency.

MNIST Classifier | *Python, NumPy, SciPy, pandas, scikit-learn* **Google Colab**

- Built a **Support Vector Machine model** from scratch to classify MNIST digits (0s and 1s) with 99.9% accuracy using **L-1 Norm Linear Regression** with **SciPy** linprog function and **NumPy** for data preprocessing and matrix manipulation.